

**ABSTRACT OF THE DISCLOSURE**

The present invention provides an off-line diagnosis system whereby the measurement resolution (number of measurement points) can be increased in order to obtain detailed input-output characteristics, and step response characteristics can be obtained at a sufficient frequency and more efficiently, without expanding the physically limited memory capacity of a field instrument or host application.

The off-line diagnosis system comprises a field instrument that performs process control and has a self-diagnosis function or a valve diagnosis function and a host application that performs digital communication with the field instrument, wherein the self-diagnosis of the field instrument is executed or the diagnosis of a valve is executed during an off-line interval and diagnosis results are transmitted to the host application, and wherein the signal input range of the field instrument or the valve is divided into a plurality of zones with respect to the time axis or input axis, and the diagnosis results of each zone are successively transmitted to the host application.

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